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	·	Page	Line	Page	Line	DOUBLE-CLICK in the appropriate spreadsheet comment cell before pasting your comment. ** Only ONE comment per row, please.
	10	3	13	3	12	Add "surface air" before "temperature continuing". Also add "(SAT)" after temperature and use the
1	10	3	13	3	13	abbreviation.
2	10	3	16	3	16	Add "globally averaged SAT" before "range of only".
	10	3	19	3	19	future variations in natural forcings could expand this range somewhat - too vague - Add sentence
3						or 2 on the impact of a very large volcanic eruption on these projections.
4	10	3	22	3	22	Add "globally averaged" before "warming with a range".
	10	3	24	3	25	consequences - a loaded word? I would delete - there are clear consequences depending on which
5						scenario is followed. Repleace with - the scenario followed matters.
6	10	3	25	3		Add "globally averaged SAT" before "range of".
	10	3	33	3	33	Change "in the stratosphere" to "throughout the stratosphere". The wording could mean only the
7						tropical stratosphere.
8	10	3	34	3		first seen - Relative to present day?
9	10	3	39	3		Add "global mean SAT" before "warming".
10	10	3	43	3	43	Move "in particular" to the end of the sentence.
	10	4	26	4	27	as much as 90% - I assume this is a spatial reduction. The wording is such that it could mean
11						vertically. Reword.
12	10	4	32	4		Change "growingly large fraction" to "a larger and larger fraction".
	10	4	34	4	34	730 and 1020 ppm - How can the lower end of the range be lower than 830 and be consistent with
						the statement that the carbon feedbacks increase the CO2 in the atmosphere. Needs more
13	40		07	4	07	
14	10	4	37	4		upper warming estimate 1.2C higher - Awkward. Reword.
15	10	4	39	4	_	it leads to a reduction of the emissions required to achieve a given atmospheric CO2 stabilization - this is very unclear to me. Reduction from what? Previous emission scenarios?
16	10	4	46	4		2100, at a rate - Add "of increase" after "rate".
10	10	5	1	5		I assume the sea level rises in the Arctic are due to the thinning of the sea ice (less weight on the
				Ŭ	_	water. Correct? In the Southern Ocean, the changes are related to the poleward wind shift. I
17						assume.
18	10	5	14	5	20	Does increase in precipitation lead to more soil water availability? If not, mention?
19	10	5	54	5	54	Add "after 2100" to end of sentence.

#	Chapter	Start Page	Start Line	End Page	End Line	** If you are cutting and pasting comments from another application into the review form, please DOUBLE-CLICK in the appropriate spreadsheet comment cell before pasting your comment. ** Only ONE comment per row, please.
20	10	6	3	6		Does this apply to all models? How important is the 0.5 w/m**2? What is your assessment? How does this impact the ocean heat uptake assessments?
21	10	6	25	6		Add "for centuries to millenia" after "warming maintained".
22	10	7	12	7	16	The intercomparison of AOGCM results to understand response differences among the models are why the idealized CO2 increase integrations are important. Reword.
23	10	7	26	7	26	Results begin in year 2000 - Is not clear what this means. It is the start of the integrations and analysis (with the caveats noted later in the text).
24	10	9	19	9	22	Many other aerosol types are used in the AR4 models. Need to mention. This is an advance since the TARthe aerosols are more than just the sulphates as noted later in the text.
25	10	9	47	9	50	This seems a good place to note that the stabilization scenarios are un-realistic in a number of ways. One of the important that they are not realistic is that they break the connection between the emission of GHG and aerosols.
26	10	13	30	14	18	Does this discussion belong in this chapter/report? It seems a reference to the WGIII report is all that is needed.
27	10	15	43	15	43	Add "10.1 and" before "table 10.3.1".
28	10	15	49	15		low, medium, high - In terms of what? Radiative forcing?
29	10	16	44	16	44	After "in each scenario" add - with ocean heat uptake playing a list on determining the response.
30	10	19	14	19	14	Change "low" to "small"?
31	10	23	5	23	5	"are small" - This seems to contradict what is one page 22 Lines 30-39.
32	10	23	15	23		"continuation of the melting of Greenland" - Is this established? The net change is melting? Reference?
33	10	23	41	23	41	"cannot be" - Too strong? Is "will not be" better?
34	10	24	25	24		Change "high resolution" to "higher resolution". What is high is vague.
35	10	24	33	24	33	"these simulations" To what does "these refer? The refeence contains models that are not EMICs.
36	10	24	45	24	49	Another physical reasoning for the increased Arctic heat transport is thatr the sea ice edge and associated deep water formation areas tend to move poleward in the warming world.

						O-manut
#	Chapter	Start Page	Start Line	End Page	End Line	<u>Comment</u> ** If you are cutting and pasting comments from another application into the review form, please DOUBLE-CLICK in the appropriate spreadsheet comment cell before pasting your comment. ** Only ONE comment per row, please.
37	10	25	7	25		The convection in the Lab Sea stopping in a 1% CO2 increase run is also discussed in Stouffer et al. 2006. Stouffer, R. J., T. L. Delworth, K. W. Dixon, R. Gudgel, I. Held, R. Hemler, T. Knutson, M. D. Schwarzkopf, M. J. Spelman, M. W. Winton, A. J. Broccoli, H-C. Lee, F. Zeng, and B. Soden, 2006: GFDL's CM2 global coupled climate models. Part IV: Idealized climate response. Journal of Climate, 19(5), 723-740.
38	10	32	22	32	25	The physics of the increase in river runoff seem very different than what is discussed above. This difference should be noted. The increase spring river flow is related to the increase wintertime precipitation and snow depth in high latitudes. It also seems related to the faster melt period.
39	10	33	13	33		Wording. Did the value of the wintertime mean change in the warmer climate?
40	10	35	31	35		Type-oI think. Density should be intensity. Correct? If not, what is meant by density?
41	10	36	37	36		Add "globally averaged SAT" before "ranging between". What scenario is used? Is this important?
42	10	38	4	38		1.5 to 4.5 C - Reference box 10.2 and dicussion in 10.5.2.
43	10	38	7	37	7	Add "in future projections" after "effect of land cover change". Some models had changing land cover in the historical runs.
44	10	38	45	38	45	"will become" - How likely is this statement? Or change words to "could reduce".
45	10	38	46	38	46	Does the IS92a scenario need a reference? Is it worth noting that the CO2 concentration is similar to the A2?
46	10	41	47	41	47	I think you should add a other subsection in 10.5 that discusses possible missing future forcings. The most important new point is that of the impact of a large volcano on the projections. Solar, land use, abrupt releases of CH4 from wetlands/permafrost/ocean hydrates and etc. could also be discussed. Referencing section 8.7.
47	10	42	46	42	46	Worth noting the expensive nature of running AOGCMs?
48	10	44	21	44		This section should reference the discussion in 8.8.
49	10	45	12	45	12	Does the IS92a scenario need a reference? Is it worth noting that the CO2 concentration is similar to the A2?
50	10	46	37	46	53	Much of this discussion could be moved into my new proposed subsection.
51	10	54	48	54	49	The wording needs changed. Most folks will not understand the relationship be density and volume. I would delete the first sentence and change the second sentence to begin - As sea water warms, the thermal expansion

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52	10	55	4	55		Does the scenario used matter? If not change "scenario SRES A1B" to "all scenarios".
53	10	55	10	55		Before "more than twice" add in the multimodel ensemble, using the SRES A1B scenario".
54	10	55	40	55		Unclear to me what this means. "It shows" - What is "it"?
55	10	56	15	56		After "scenario runs" add "evaluated here".
56	10	65	1	65	31	Stouffer (2004) should be referenced in this discussion. In line 29?
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